

# MORE EFFICIENT AND COST-EFFECTIVE USE OF MICROWAVE SPECTRUM

## Summary

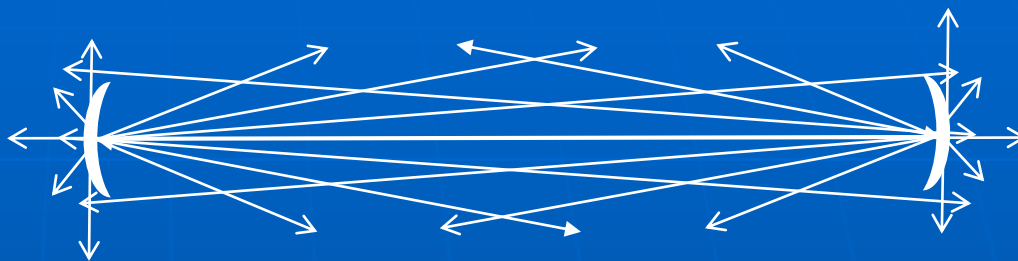
- ❖ There is a Spectrum Crisis (especially Mid-Band)
- ❖ Spectrum Cannot be Manufactured
- ❖ Part 101 Spectrum can be used More Efficiently and Effectively
- ❖ Benefits of using Part 101 Spectrum More Efficiently and Effectively:
  - Makes up to 2 GHz of spectrum available for PtMP, mobile and unlicensed use with channel bandwidths up to 160 MHz (larger than the total bandwidth of the CBRS band).
  - No impact on Existing Licensees (FS and FSS)
  - Blocks far fewer New Applicants
- ❖ Dramatically Lowers Cost of Service

*Encina Communications Corp.*

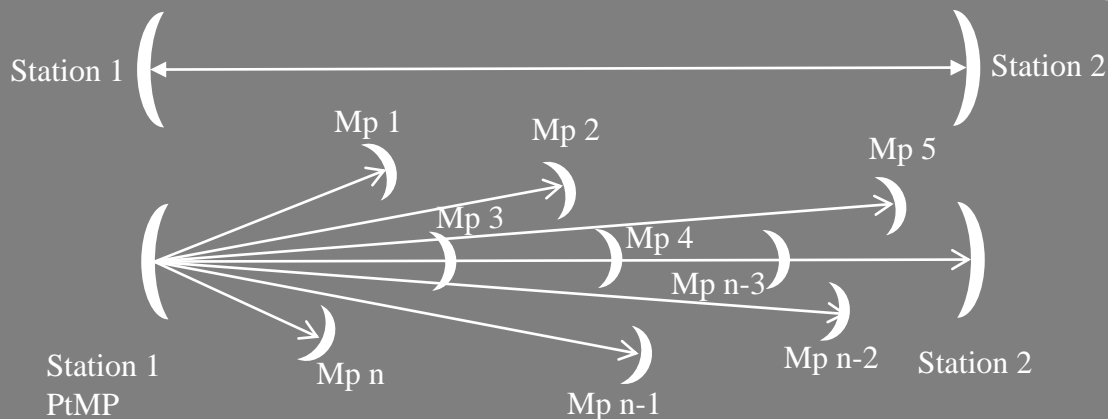
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## Licensed Fixed Station(s) Communicating with other Licensed Fixed Stations

**6. No Interference** -- Prior to licensing, Stations 1 and 2 of a PtP link would have had to comply with the frequency coordination procedures (Rule 101.103) and to have shown that the radiated power (EIRP) at all angles around each station would not cause harmful interference to existing licensees and applicants with previously filed applications.



**7. Multi-Point Operation** -- When a link is operated PtP it only uses the EIRP on the antenna centerline; the EIRP at other angles is unused, it is wasted. By using TDMA the licensee can communicate with other licensed station locations (which were previously shown by prior coordination notices to cause no harmful interference) on the centerline and at other angles around Stations 1 and 2.



**8. Conserving Spectrum** -- It has been shown above that operators of licensed PtP stations can significantly increase the number of served locations by putting to productive use off-centerline radiation and thereby conserve precious Part 101 spectrum, and lowering costs.

<u>Stn 1</u>	<u>No Mp Stns</u>	<u>No Freq</u>	<u>Mo Costs (MRC)</u>
PtP	10	10	\$ 9,000
PtMP	10	1	\$ 300

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## Licensed Fixed Stations Communicating with Unlicensed Nomadic (WiFi) and/or Mobile Devices

**9. Safe Operation** -- Unlicensed nomadic or mobile devices can be safely operated by a PtP licensee from either or both of the licensed Stations 1 and 2, provided:

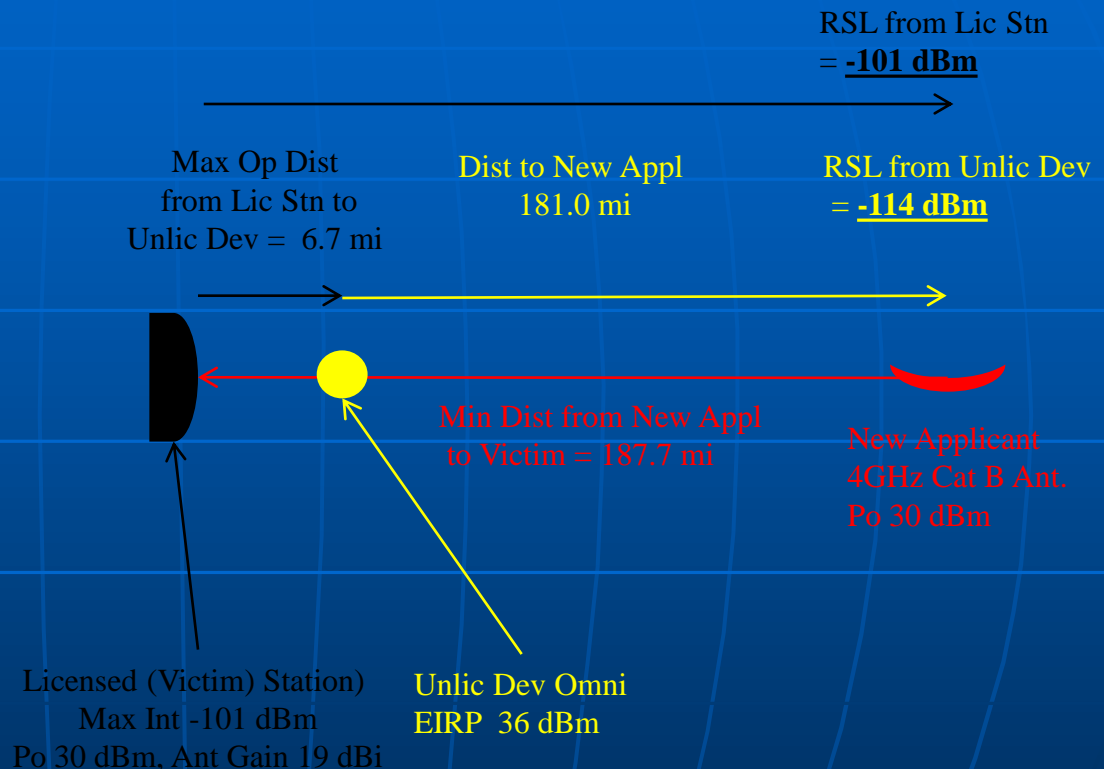
i. The unlicensed nomadic and mobile devices are only permitted to transmit after they are connected to a licensed station identifying itself as having the capability of communicating with unlicensed nomadic or mobile devices,

ii. The maximum antenna gain of the unlicensed device is limited to 6 dBi,

iii. The unlicensed device EIRP is limited to 36 dBm,

iv. The interference from any unlicensed device arriving at a licensed or new license applicant's station is less than the interference from the licensed Stations 1 or 2.

**10. Secondary Status** -- The unlicensed devices are secondary and therefore must accept all interference.



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